

Form 1449 (Modified)

**Information Disclosure  
Statement By Applicant**

(Use Several Sheets if Necessary)

Atty Docket No.  
NOVLP096/NVLS-002902

Application No.:  
10/815,560

Applicant:  
Wongsenakhum et al.

Filing Date  
March 31, 2004

Group  
1762 2823

**U.S. Patent Documents**

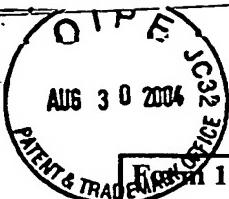
Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
JMC	A1	6,143,082	11/07/00	McInerney et al.			
JMC	A2	5,795,824	08/18/98	Hancock			
JMC	A3	4,804,560	2/89	Shioya et al.			
JMC	A4	5,661,080	08/97	Hwang et al.			
JMC	A5	5,726,096	3/98	Jung			
JMC	A6	5,804,249	9/98	Sukharev et al.			
JMC	A7	6,294,468	09/01	Gould-Choquette et al.			
JMC	A8	5,391,394	02/95	Hansen			
JMC	A9	6,245,654	06/01	Shih et al.			
JMC	A10	6,297,152	10/01	Itoh et al.			
JMC	A11	6,265,312	07/01	Sidhwa et al.			
JMC	A12	5,956,609	09/99	Lee et al.			
JMC	A13	6,309,966	10/01	Govindarajan et al.			
JMC	A14	5,250,329	10/93	Miracky et al.			
JMC	A15	6,066,366	5/00	Berenbaum et al.			
JMC	A16	5,817,576	10/98	Tseng et al.			
JMC	A17	5,326,723	07/94	Petro et al.			
JMC	A18	5,028,565	07/91	Chang et al.			

**Foreign Patent or Published Foreign Patent Application**

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
	B1							

**Other Documents**

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>JMC</i>	C1	George et al., "Surface Chemistry for atomic Layer Growth", J. Phys. Chem., 1996, vol. 100, no. 31, pgs. 13121-13131.



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<i>[Signature]</i>	C2	Bell et al., "Batch Reactor Kinetic Studies of Tungsten LPCVD from Silane and Tungsten Hexafluoride", J. Electrochem. Soc., January 1996, Vol. 143, No. 1, pgs. 296-302.
<i>[Signature]</i>	C3	Klaus et al., "Atomic layer deposition of tungsten using sequential surface chemistry with a sacrificial stripping reaction", Thin Solid Films 360 (2000) 145-153.
<i>[Signature]</i>	C4	Klaus et al., "Atomically Controlled Growth of Tungsten and Tungsten Nitride Using Sequential Surface Reactions," Applied Surface Science, 162-163, (2000) 479-491.
<i>[Signature]</i>	C5	Li et al., "Deposition of WN <sub>x</sub> C <sub>y</sub> Thin Films by ALCVD™ Method for Diffusion Barriers in Metallization," IITC Conference Report, 2002, 3 Pages.
<i>[Signature]</i>	C6	Elam et al, "Nucleation and Growth During Tungsten Atomic Layer Deposition on SiO <sub>2</sub> Surfaces," Thin Solid Films, 2001, 13 Pages.
<i>[Signature]</i>	C7	Collins et al., "Pulsed Deposition of Ultra Thin Tungsten for Plugfill of High Aspect Ratio Contacts," Presentation made at Semicon Korea 2003, January 21, 2003, 9 pages.
<i>[Signature]</i>	C8	Collins, et al., "Pulsed Deposition of Ultra Thin Tungsten for Plugfill of High Aspect Ratio Contacts," Semiconductor Equipment and Materials International, Semicon Korea, January 21, 2003, 3 pages.
<i>[Signature]</i>	C9	Lee et al., "Pulsed Deposition of Ultra Thin Tungsten and its Application for Plugfill of High Aspect Ratio Contacts, Abstract, January 21, 2003, 1 page.

Examiner	Date Considered
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Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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#### U.S. Patent Documents

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<i>JAE</i>	A1	5,661,080	08/26/97	Hwang et al.	—	—	12/10/93
<i>JAE</i>	A2	2003/127043	07/10/03	Lu et al.	—	—	07/12/02
<i>JAE</i>	A3	2003/059980	03/27/03	Chen et al.	—	—	09/25/01
<i>JAE</i>	A4	2002/090796	07/11/02	Desai et al.	—	—	10/16/01

#### Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation
	B1						Yes
							No

#### Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>JAE</i>	C1	Lee et al., PCT Search Report, Completed October 15, 2004, PCT/US2004/006940, Int'l filing date May 3, 2004
<i>JAE</i>	C2	Lee et al., Written Opinion, Completed October 15, 2004, PCT/US2004/006940, Int'l filing date May 3, 2004
	C3	
	C4	
Examiner		Date Considered

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